



CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

Name(s) Madison M. Dutra	Project Number J1003
Project Title Save the Wetlands: Investigating Pond Water Quality and Water Sources	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals California has lost more than 90% of its wetlands in the past 200 years. Environmentalists say that due to this wetland loss, artificial reservoirs and farm ponds have become important replacements for lost habitat. Evans Pond is a local farm pond established over 100 years ago from runoff. Many types of birds and migratory ducks inhabit the pond. Many turtles also make Evans Pond their home. Evans Pond has been having trouble maintaining an adequate water supply. The goals of this project were to evaluate the water quality of Evans Pond, document the animals living there, and go to the community to seek long-term solutions for supplying Evans Pond with water.</p> <p>Methods/Materials For this experiment I obtained water quality testing kits and materials from La Motte and Hach chemical companies. I performed a total of 338 water quality tests using 21 different water samples obtained over six months. I tested water samples for pH, alkalinity, ammonia, hardness, nitrate, nitrite, phosphate, chlorine, chloride, turbidity, dissolved oxygen, biochemical oxygen demand, total coliform, and E. coli. I recorded wildlife observations each time I visited the pond.</p> <p>Results Half of the available dissolved oxygen values fell below the recommended ranges. The pH levels were also sometimes too high, and ammonia values at these pHs were high enough to possibly cause stress to animal life. Coliform counts were above desired ranges. Phosphate levels were high enough to promote excessive plant growth which speeds eutrophication. I was happy to see many migratory ducks, such as the Ring-Necked Duck, American Wigeon and Gadwall at the pond. However, I am not positive the Clemmys (Actinemys) marmorata pallida resides at Evans Pond. Since the days have become sunnier, I have seen that some of the turtles that are definitely not Red-Eared Sliders are also not Clemmys.</p> <p>Conclusions/Discussion The community is now developing a plan for supplying water to the pond. They are interested in my project as documentation of the wildlife. Evans Pond receives imported water approximately one to three times a year. I believe there should be a pipe connected to a known nearby reclaimed water source (or other permanent solution) to provide enough water for Evans Pond since many animals rely on it as their habitat.</p>	
Summary Statement The goals of this project were to evaluate water quality in a local pond, document the wildlife, and find long-term solutions for maintaining an adequate water supply to the pond.	
Help Received Thanks to my parents for driving me to Evans Pond. Thanks to Robert Dingeman, a civic community leader, who supported my project and provided the historical background of the pond. Thanks to my science teacher for providing me with scientific guidance. Thanks to Eileen Rodriguez, Parks and	